

Patent Application  
Docket No. 45688-00002USPT

In the Claims

1        1. (Currently Amended) A flip-chip light-emitting device, comprising  
2            a transparent substrate comprising a main surface and a surface opposite to said  
3        main surface, wherein said surface opposite to said main surface is the light-emitting surface of  
4        said device;

5            a semiconductor stacked structure arranged over-a said main surface of said  
6        transparent substrate wherein said stacked structure comprises an n-type GaN-based III-V Group  
7        compound semiconductor layer adjacent to said main surface and a p-type GaN-based III-V  
8        Group compound semiconductor layer adjacent to said n-type semiconductor layer;

9            a first electrode being in electrical contact with said n-type semiconductor layer,  
10        and

11            a second electrode being in electrical contact with said p-type semiconductor  
12        layer;

13            wherein said second electrode has good reflectivity of light and, covers most of  
14        the outer surface of said p-type semiconductor layer and is positioned opposite to said light-  
15        emitting surface of said substrate.

1        2 (Original) The device of Claim 1 wherein said stacked structure further comprises an  
2        active layer placed between said n-type semiconductor layer and said p-type semiconductor  
3        layer.

1        3 (Original) The device of Claims 1 or 2 further comprising an insulating layer at least  
2        coated on the side surface of the stacked structure, a portion of said first electrode and a portion  
3        of said second electrode.

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1        4 (Original) The device of Claims 1 or 2 further comprising a base which has a first  
2 and a second conductive portions respectively connected to said first and second electrodes.

1        5. (Original) The device of Claim 4 wherein said base can be a conductive lead frame, a  
2 glass lead frame, a circuit board or a thin-film circuit.

1        6. (Original) The device of Claims 1 or 2 wherein said second electrode is a multi-layer  
2 structure comprising a light-transmitting conductive layer and a layer of aluminum (AL) or silver  
3 (Ag).

1        7. (Original) The device of Claims 1 or 2 wherein said second electrode is a multi-layer  
2 structure of nickel/gold/titanium/ aluminum (Ni/Au/Ti/Al), Indium-Tin Oxide/aluminum  
3 (ITO/Al) or Indium-Tin Oxide/silver (ITO/Ag).

1        8. (Currently Amended) A flip-chip light-emitting device, comprising  
2            a transparent substrate comprising a main surface and a surface opposite to said  
3 main surface, wherein said surface opposite to said main surface is the light-emitting surface of  
4 said device;

5            a semiconductor stacked structure arranged over [a] said main surface of said  
6 transparent substrate wherein said stacked structure comprises an p-type GaN-based III-V group  
7 compound semiconductor layer adjacent to said main surface and a n-type GaN-based III-V  
8 Group compound semiconductor layer adjacent to said p-type semiconductor layer;

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9                   a first electrode being in electrical contact with said n-type semiconductor layer;

10                and

11                a second electrode being in electrical contact with said p-type semiconductor  
12                layer,

13                wherein said first electrode has good reflectivity of light ~~and~~, and covers most of  
14                the outer surface of said n-type semiconductor layer and is positioned opposite to said light-  
15                emitting surface of said substrate.

1                9. (Original) The device of Claim 8 wherein said stacked structure further comprises an  
2                active layer placed between said n-type semiconductor layer and the p-type semiconductor layer.

1                10. (Original) The device of Claims 8 or 9 further comprising an insulating layer at least  
2                coated on the side surface of the stacked structure, a portion of said first electrode and a portion  
3                of said second electrode

1                11. (Original) The device of Claims 8 or 9 further comprising a base which has a first  
2                and a second conductive portions respectively connected to said first and second electrodes.

1                12. (Original) The device of Claim 11 wherein said base can be a conductive lead frame,  
2                a glass lead frame, a circuit board or a thin-film circuit.

1                13. (Original) The device of Claims 8 or 9 wherein said second electrode is a multi-layer  
2                structure comprising a light-transmitting conductive layer and a layer of aluminum (Al) or silver  
3                (Ag)

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1           14. (Original) The device of Claims 8 or 9 wherein said second electrode is a multi-layer  
2       structure of titanium/aluminum (Ti/Al), titanium/silver (Ti/Ag), Indium-Tin Oxide/aluminum  
3       (ITO/Al) or Indium-Tin Oxide/silver (ITO/Ag).